REMARKS

This amendment is responsive to the Office Action dated July 8, 2004. Claims 1 - 7 are pending in this application and have been rejected. Reexamination is respectfully requested in light of the amendments and remarks.

These remarks follow the order of the outstanding Office Action beginning at page 2 with the exception that the rejection of paragraph number 6 (preamble of claim) is discussed last.

Specification

Applicant has amended the specification at page 2, line 6 as suggested.

Claim Rejections - 35 USC § 112

Applicant has amended claim 1 to read "a correlation between photographing conditions". This properly provides antecedent basis for the recitation of the photographic conditions recited in claim 4 which is dependent from claim 1. Further, Applicant respectfully submits that a memory for storing a correlation table defining a single photographing condition is not in agreement with the specification, and if only a single condition were at issue, there would be no need for a look up table. Applicant submits

that the claim as amended correctly states Applicant's invention. The Examiner has understood that the term "conditions" is correct because he uses it at page 3, line 15 and page 4, line 15.

Claim Rejections - 35 USC § 103

As previously stated, paragraph 6 will be discussed later in this paper.

An object of the Applicant's invention is to correct a shift of the focal point due to wave length, focal length, photographing length, brightness and so on. The wave-length difference means the difference of converging point. And, changing this converging point means changing the optical path length (optical distance) by changing the thickness of optical elements with high **refractive** indices. The invention changes the total thickness of two wedge-shaped prisms disposed between a photographing lens and a solid state image pickup element on the optical axis and thereby changes the optical path length. By changing the optical path length, the invention prevents from shifting of focal point due to the wave-length difference and makes it possible to compensate the longitudinal chromatic aberration.

Masson '204

On the contrary, the reference USP 4,249,204 to Masson, the thickness of two groups, each group comprises two prismatic blades, having different index of dispersion from each other are

changed respectively, and the total index of dispersion of these two groups is changed so as to compensate the chromatic aberration. This is, the total thickness of the two groups on the optical axis is not changed, and therefore, the optical path length is not changed as Applicant's invention of claim 1 does (see column 1, lines 34-38).

The following demonstrates a shift of focal point in case of using two materials of substantially same (but not identical) refractive index, but with different indices of dispersion where the thicknesses of materials are not changed. This is based on the Masson '204 disclosure that the materials having the **same** index of refraction have different dispersion indices

	λ(nm)	Refractive Index	
Material 1	435.8(blue)	1.63434	
	546.1	1.61685	
	656.3(red)	1.60806	index of dispersion 36.7
Material 2	435.8(blue)	1.62799	
	546.1	1.61671	
	656.3(red)	1.61067	index of dispersion 54.7

In case of thicknesses of materials are 10.0mm

Material 1 10.0/1.63434 = 6.119mm (Blue)

10.0/1.60806 = 6.219mm (Red)

Material 2 10.0/1.62799 = 6.143mm (Blue)

10.0/1.61067 = 6.209mm (Red)

(6.219-6.119) - (6.209-6.143) = 0.034mm
Material 1 Material 2

Therefore, as shown in the above, the shift (0.034 mm) of the focal point remains.

Masson '204 discloses an optical filter having two prisms (2a) and (2b) and a second two prisms (3a) and (3b). Prisms (2a) and (2b) move in opposite directions to prisms (3a) and (3b). This is shown by the arrows indicated at Figure 1. Since the prism movement is always linked by rack and pinion mechanisms (5a), (5b), (7a), and (7b), there is no independent movement between prisms, such as prisms (2b) and (3b). Stated another way, when (2b) moves in the direction of the arrow shown in Figure 1, prism (3b) also moves in the opposite direction as shown in the arrow in Figure 1. The optical filter of Figure 1 of '204 is a single unit where four prisms move together to form a single optical filter. This optical filter is not of variable thickness, and, therefore, does not respond to Applicant's claimed actuator for changing the thickness of the variable-thickness optical filter. As '204 teaches, the rack and pinion connected prisms are assembled so that the total thickness of the assembly remains

constant (see column 2, line 46 - 47, column 2, line 64 - 66, and the last line of claim 1). Applicant claims a variable-thickness optical filter and Masson '204 teaches away from such a filter.

Next, there can be no actuator for changing the thickness of a variable thickness optical filter because the actuator (rack and pinion mechanisms) (7b) (7a) act together and do not change the thickness of a variable-thickness optical filter. Applicant respectfully submits that not only does '204 not meet the terms of claim 1, it in fact teaches away from claim 1 in that it requires that there be a constant thickness.

The Examiner argued that the actuator (7a) - (7b) moves plates of device (2) and the thickness is adjusted. This is simply incorrect. When both (7a) and (7b) move, the overall thickness of the filter remains the same as shown in Figure 1. Masson is not designed for nor does it disclose a dual use visible/infrared image pickup device having sensitivity ranging from the visible-light range to the infrared range, as set forth in the first three lines of Applicant's claim. The Examiner has not addressed this limitation of the claim at all.

The Examiner asserts that Masson has a means for correcting a shift in focal point caused by chromatic aberration, citing column 1, lines 41 - 57 and Figure 1. Applicant respectfully traverses this assertion by noting that column 1, at lines 40 - 57 does not teach the claimed change of thickness, nor does it suggest it. The phrase "focal point" is not present. The phrase "focal point"

does not appear from lines 40 through 53. On the other hand, the reference to focal length in line 56 is with respect to focal length in a variable focal length lens system. This, however, is not a shift in focal point which would otherwise be caused by longitudinal chromatic aberration. Instead, it is a change produced by varying the focal length in a variable focal-length lens system. Here, it should be noted that the Examiner has made reference to focal point which is a term found in the preamble portion of the claim.

Morofuji '188

The Examiner recognizing that Masson lacks a use of memory for storing a correlation table defining a correlation between photographing conditions and the thickness of the variable-thickness optical filter and a thickness control means which controls the actuator on the basis of memory has asserted that Morofuji would suggest modification of '204 in order to achieve this end.

First, the Examiner should note that Morofuji comes from an art which can not be considered to be analogous to Applicant's claimed visible-light/infrared image pickup device. On the other hand, Morofuji '188 is off the mark in that it is for correction of vibration within an optical apparatus. Morofuji discloses merely a variable angle prism driven on the basis of a vibration signal (not a look up table or memory for storing a correlation

table as claimed by Applicant). Applicant's lookup table (memory) is for defining a correlation between photography conditions which are the visible/infrared terms used in line 1 of claim 1 which is related to thickness (line 6) and change of thickness. Morofuji corrects an angle for vibration. Morofuji simply is from a non-analogous art which does not even relate to an image pickup, infrared, or the like. Instead, Morofuji is a vibration correction device for an optical instrument which corrects for a mechanical error (vibration). The Examiner has relied upon non-analogous art in order to assert that Applicant's claimed invention is obvious. The Examiner asserts that Morofuji discloses use of a memory storing a correlation table defining the correlation between photographic conditions citing column 15, lines 33 -39. In this portion of the specification, the VAP (variable angle prism) response characteristics are calculated. It is on the basis of a calculation result that the optimum correlation parameter is selected from a data table which stores a plurality of frequency correction coefficients prepared in advance. This is related to vibration, not photographic conditions. Stated another way, the photographic conditions would not change if the Morofuji device were held steady. The vibration is a condition of the camera, not photographing conditions.

In Figure 2 of '188, there is shown a typical feed back mechanism (based on Newtonian laws of motion, not optics) for control of the variable angle prism device. In this diagram, it

can be easily seen that there is no input, and no consideration of photographing conditions. Instead, the items sensed are angular velocity (4d) and angular displacement (4e). Neither angular velocity nor angular displacement are photographing conditions. Instead, they are typical measurements of motion as found in Newton's fundamental equations of motion.

The steps S208, S207 and EEPROM 6 discussed in column 15, lines 33 - 47 are shown in Figure 18. These are all functions of angular velocity in yaw and pitch. This is camera motion, and not a photographing condition as claimed. '188 teaches that the field of his invention is variable angle prism drive based upon a vibration detection means for detecting vibration.

Claim 1

Claim 1 sets forth Applicant's invention. This claim must be read as a whole which is in accordance with the mandate of 35 USC § 103. Applicant claims an image pickup element having sensitivity ranging from visible-light range to the infrared range. This is not disclosed in the art of record. Next, Applicant claims that there be a means for correcting a shift in focal point which would otherwise be caused by longitudinal chromatic aberration arising in a photographic lens. As Applicant discloses, this longitudinal chromatic aberration shift is substantial when the visible-light range is shifted to the infrared. It is respectfully requested that the Examiner refer to

Applicant's Figures 3A and 3B which show the large shift between the visible-light range and the near infrared range on longitudinal chromatic aberration. It is this shift which is compensated for in Applicant's claimed invention. Applicant further claims a variable thickness optical filter and actuator for changing the thickness of the variable thickness optical filter. As pointed out above, the optical filter of '204 does not change thickness, but remains the same. Still further, the actuator in '204 does not change the overall thickness of the optical filter, but moves two separate filters in order to maintain the same thickness.

In Applicant's claim there is a memory for storing a correlation table between photographing conditions and the thickness. This is simply not suggested by '204, and there nothing in '188 which would suggest such a correction for the photographing conditions and the thickness of the claimed variable thickness optical filter for the purpose of correcting shift in optical point. Instead, '188 suggests correction for vibration, not shift in optical point as wave length changes (infrared/visible). Claim 1 further claims a thickness control means for controlling the actuator on the basis of a correlation table stored in the memory. There is no thickness control and correlation table stored in memory suggested by the references of record.

Preamble (Paragraph 6 of Page 3)

Applicant has considered carefully the comments of the Examiner with respect to Kropa v. Robie 187F2d, 150, 152, 88 USPQ 478-481. The language stated by the Examiner:

> ". . .the preamble of the claim neither recites the limitations of the claim nor is the preamble necessary to give life, meaning and vitality to the claim, therefore, the preamble is not served to further define the structure of the claim."

is not to be found at page 481 of 88 USPQ. In fact, the Kropa decision held that the Kropa preamble limitation was meaningful in the claim, and that the party Kropa could not ignore this limitation in asserting priority over the other party to the interference. Kropa, therefore, holds that on its facts, the limitation in the preamble recited a limitation. Kropa states as follows:

> "In the case before us, the words "An abrasive article" are essential to point out the invention defined by the counts. In our judgment those introductory words give life and meaning to the counts, for it is only by that phrase that it can be known that the subject matter defined by the claims is comprised as an abrasive article." (See Kropa 88 USPQ page 481)

It is, therefore, respectfully submitted that Kropa does not support the assertion made by the Examiner.

MPEP § 211.02 supports Applicant's contention that the preamble language of claim 1 is clearly a part of Applicant's invention which must be considered with the other elements of the claim. The preamble of Applicant's claim 1 has limiting structure

such as (1) dual-use visible-light/infrared pickup device, (2) image pickup element having sensitivity ranging from visible-light range to the infrared range, (3) means for correcting a shift and focal point. These three physical elements in the preamble portion of the claim cannot be ignored because they are linked to the body of the claim. The pickup element is again recited at line 7 of claim 1..

In Applicant's claim 1, Applicant sets forth a combination which is not even disclosed in the prior art (only alleged to be obvious). Neither of the references ('204 or '188) even mentions dual use including infrared. Applicant's preamble recites a new device and, therefore, gives live and meaning.

Applicant's specification was directed to the solution of problems in the construction of a dual-use visible-light/infrared image pickup device with means for shifting focal point. Applicant has claimed a dual use image pickup having a particular combination of a variable thickness filter which is controlled according to light conditions.

This is a rejection under 35 USC § 103. The limitation in the preamble is therefore an issue in determination of a question of obviousness. The facts here show that as a matter of law the preamble reciting is necessary and essential to breathe life and meaning into the claim 1. This is an embodiment of a new combination which is a dual-use image pickup device and not taught

by any prior art. Applicant arrived at the dual-use image pickup by studying the problem and achieved the invention by a process which involved the invention of a dual-use image pickup with a means for correction which is the claimed variable thickness of optical filter. This is not merely taking a claimed combination from another device (a camera) and inserting it in a in a dual-use image pickup environment. Stated simply, a preamble is essential to point out the invention defined by the claim which is a requirement where the preamble is being limited in accordance MPEP § 2111.02. This claim refers to dual-use visible-light infrared image pickup. This limits the claim.

In Chisum Patents 8.01[1], the author after discussing the Kropa v Robie 187F.2D.150,88 USPQ 478 (CCPA 1951) (discussed infra) refers to Marston v. J.C. Penney Co., (1965), 353 F2d 976, 148 USPQ 25 (4th Cir. 1965) where the case turned upon whether the claim can be read independently from the preamble. Chisum concludes that whether the preamble must be read to give the meaning to the claim if it is essential to the point of invention. Here, the point of the invention is the improved dual-use image pickup device (visible-infrared light). The preamble here describes a unique article to which the claim body alone is referable. Therefore, as concluded in Chisum 8.01[1] page 8-116 in the discussion of Marston v. J.C. Penney Co., Applicant's preamble is an essential limitation to the rest of the claim.

Next, Applicant in claim 1 (first 5 lines), positively sets forth three limitations: (1) dual-use visible-light infrared image pickup, (2) means for correcting shift in focal point, and (3) sensitivity ranging from visible to infrared range. This is not a just characteristic of a prior art camera or a function of a camera. This is a positive article recitation of a new device which breathes life and meaning into the claim as opposed to a limitation which merely states an intended use. See Loctite Corp. v. Ultrascaltd Ltd. 781 F. 2d 861 228 USPQ Fed. Cir. 1985.

In Corning Glass Works v. Sumitomo Electric U.S.A., Inc., 868 F. 2d 1251, 9 USPQ 1962 Fed. Cir. 1989), the claim read as follows :

"An optical wave guide comprising :

(a) a cladding layer formed of a material. . ."

All of the limitations of the claim after the word "comprising" were found broadly disclosed a single reference United Kingdom Patent No. 1,113,101. In this case, all of the limitations are not found in a single reference (103 rejections). In fact, all of the limits are not found at all. The defense was anticipation which requires every limitation in issue to be disclosed. In Corning, the structure as claimed was considered to be identical to the structure broadly disclosed in the '101

reference. In Corning the Court held that the preamble constituted a limitation in the claim which allowed the claim to define over the prior art which would otherwise broadly anticipate the rest of the claim.

In Corning, an addition to the structure set forth in the claim, there was argued that the prior art reference while disclosing all elements of the claim, failed to properly function as an optical wave guide because it could only transmit for a few meters, rather than a long distance. The Court reasoned that the effect preamble language should be given can be resolved only in view of the entirety of the specification to gain an understanding of what the inventors actually invented and intended to encompass by the claim. Here, Applicant contends that the claim at issue and what the inventors intended to encompass was a dual-use visible light/infrared pickup device and including all of the limitations of the first 5 lines of claim 1. Applicant's specification in accordance with Corning should be read to determine what a dual-use pickup device is or in the case of Corning what an optical waveguide was. In Corning, unclaimed structure dimensions and refractive index differentials described in the specification were required so that the claimed structure would function as an optical waveguide. Applicant like Corning discloses additional unclaimed structure.

Corning stated "To read the claim in light of the specification indiscriminately to cover all types of optical

fibers would be divorced from reality. The invention is restricted to those fibers that work as waveguides as defined in the specification..., the claim preamble in this instance does not merely state a purpose or an intended use for the claim structure... rather these words get 'life and meaning' and provide further positive limitations to the invention claimed." (See 9 USPQ 2d, 1966).

In Corning, the core and cladding limitations were not the only limitations in the claim. The claim preamble required, in addition, the particular structure relationship defined in the specification for the core and cladding to function as an optical waveguide". See Chisum § 8.06 [1] page 8-119 and 9 USPQ 2d 1966.

Applicants respectively submit that Applicants' dual-use pickup device specification must be compared to the specification of the 35 USC § 103 rejection. Here, in the specifications are where the definition of Applicant's claimed invention and the device disclosed in the art relied upon differ.

The Kropa v. Robie 187 F. 2d 150. 88 USPQ 478 (CCPA 1951) decision is well known as the Court of Customs and Patent Appeals attempt to resolve the legal issue of when a preamble can be given the effect of a limitation in a claim. Here, the court reviewed 37 of its own prior decisions where 27 held that the preamble was not a limitation and 10 held that the preamble was a limitation. The Kropa Court was quoted by Chisum as follows:

> "The preamble has been denied the effect of a limitation where the claim or count was drawn to a structure and the portion of the claim following the preamble was a self-contained description of the structure not depending for completeness, upon the introductory clause; or where the claim or count was drawn to a product and the introductory clause merely recited a property inherent in the old composition defined by the remaining part of the claim. In those cases, the claim or count apart from the introductory clause completely defined the subject matter, and the preamble merely stated a purpose or intended use of that subject matter. On the other hand, in those ex parte and interference cases where the preamble to the claim or count was expressly or by necessary implication given the effect of a limitation, the introductory phrase was deemed essential to point out the invention defined by the claim or count. Usually, in those cases, there inhered in the article specified in the preamble a problem which transcended that before prior artisans and the solution of which was not conceived by or known to them. The nature of the problem characterized the elements comprising the article, and recited in the body of the claim or count following the introductory clause, so as to distinguish the claim or count over the prior art."

The most significant portion of the above quote is the underlined portion which relates to cases where there inhered in the article specified in the preamble a problem which transcended that before prior artisans and the solution of which was not conceived by or known to them. Here, the problem which inhered is in a dual-use image pickup for visible and infrared light having the claimed means for correcting a shift in focal point. The prior art relied upon by the Examiner however, is not a solution to the problem of the first 5 lines of claim 1, but rather is a solution to a photographic lens problem and a separate vibration problem, very different problems indeed. The Examiner has not

shown how the two references even suggest Applicant's solution in a different art.

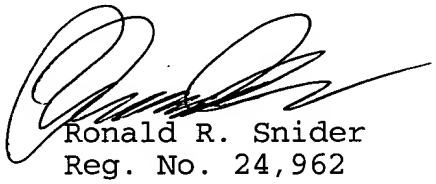
In Kropa v Robie, the claim was "an abrasive article comprising ..." Kropa argued that his application was entitled to the filing date of his prior 1938 application which disclosed the addition of grains and 2 resins but did not disclose an abrasive article as such. The 1938 case disclosed the elements of the claim body, but not the elements of the body limited by the preamble phrase "abrasive article". Kropa argued that the subject matter of the claim "count in an interference" was the body of the claim without the limitation. Instead, the Court held the claim in question did include "abrasive article" as a limitation since the "term calls for a distinct relationship between a proportion of grain and resin" therefore concluded that Kropa was not entitled to the 1938 filing date of his prior application. Since Kropa could not copy the Robie claim with an abrasive article preamble, Kropa was not able to provoke the interference.

In this instance, the Court held that the abrasive article limitation was a necessary part of the copied claim which was not disclosed in the prior 1938 application.

The Kropa decision supports the concept that the preamble must be included in the claim if it is essential to particularly point out the invention defined by the claims.

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance, and early action in accordance thereof is requested. In the event there is any reason why the application cannot be allowed in this current condition, it is respectfully requested that the Examiner contact the undersigned at the number listed below to resolve any problems by Interview or Examiner's Amendment.

Respectfully submitted,



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